

CLAIMS

Claims 1-37 (CANCELED).

38(NEW). A shared Universal Serial Bus (USB) resource comprising:

- a bus interface which communicates with a first master and a second master;
- endpoint storage circuitry, coupled to the bus interface, the endpoint storage circuitry comprising a plurality of endpoints wherein each of the plurality of endpoints is allocatable to one of the first master and the second master;
- a serial interface engine which communicates with a USB host; and
- a USB function controller, coupled to the bus interface, endpoint storage circuitry, and serial interface engine, the USB function controller comprising:
 - USB protocol logic, coupled to the serial interface engine;
 - endpoint interrupt logic which generates interrupts based on information received from the USB protocol logic;
 - interrupt steering registers; and
 - interrupt steering logic which routes each of the interrupts to a corresponding one of the first master and the bus master based on steering information provided by the interrupt steering registers.

39(NEW). The shared USB resource of claim 38, wherein the plurality of endpoints are allocated based on the interrupt steering registers.

40(NEW). The shared USB resource of claim 39, wherein, for each of the plurality of endpoints, the interrupt steering registers indicate allocation to one of the first master and the second master.

41(NEW). The shared USB resource of claim 39, wherein the interrupt steering registers comprise an interrupt steering set register and an interrupt steering clear register.

42(NEW). The shared USB resource of claim 41, wherein the interrupt steering registers further comprise interrupt steering storage circuitry coupled to the interrupt steering set register

and the interrupt steering clear register, the interrupt steering storage circuitry providing the steering information to the interrupt steering logic.

43(NEW). The shared USB resource of claim 42, wherein the interrupt steering storage circuitry comprises a plurality of set-reset latches.

44(NEW). A shared Universal Serial Bus (USB) resource comprising:

- a plurality of endpoints wherein each of the plurality of endpoints is allocatable to one of a plurality of bus masters;

- a USB function controller, coupled to the plurality of endpoints, the USB function controller comprising:

- endpoint interrupt logic which generates interrupts based on communication from a USB host;

- at least one interrupt steering register accessible by the plurality of bus masters;
 - and

- interrupt steering logic which routes each of the interrupts to a corresponding bus master of the plurality of bus masters based on steering information provided by the interrupt steering registers.

45(NEW). The shared USB resource of claim 44, wherein the at least one interrupt steering register comprises an interrupt steering set register and an interrupt steering clear register.

46(NEW). The shared USB resource of claim 45, wherein the at least one interrupt steering registers further comprise interrupt steering storage circuitry coupled to the interrupt steering set register and the interrupt steering clear register, the interrupt steering storage circuitry providing the steering information to the interrupt steering logic.

47(NEW). The shared USB resource of claim 44, wherein the shared USB resource is used in a system, and wherein the system comprises the plurality of bus masters.

48(NEW). A method for operating a shared resource, comprising:

providing a plurality of endpoints wherein each of the plurality of endpoints is allocatable to one of a plurality of bus masters;

a function controller, coupled to the plurality of endpoints, the function controller comprising:

endpoint interrupt logic which generates interrupts based on communication from a host;

at least one interrupt steering register accessible by the plurality of bus masters; and

interrupt steering logic which routes each of the interrupts to a corresponding bus master of the plurality of bus masters based on steering information provided by the interrupt steering registers.

49(NEW). A method as in claim 48, wherein the shared resource is a Universal Serial Bus (USB) resource.

50(NEW). A method as in claim 48, wherein the shared resource is used in a system, and wherein the system comprises the plurality of bus masters.